



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

PUPILS PAST AND PRESENT—A COMPARATIVE STUDY.

[The following interesting and informative study by Mr. V. W. B. Hedgepeth was originally published in The Indianapolis News five or six years since, we judge, though the exact date is lost.—EDITOR.]

BY A very opportune find by Principal Riley, of Springfield, Mass., the most satisfactory comparison of the school methods of our grandfathers' time and of our own was recently made possible. While rummaging in the garret of an old school building complete sets of examination papers, together with the answers and markings, all bearing the date of October, 1846, were found and are to-day in a bound volume in the office of the superintendent.

By submitting these questions to pupils of the same age and comparing results the school authorities in Springfield were enabled to arrive at some comparison as to the progress or retrogression of the school system, in Springfield, at least.

Originally the questions were given to pupils of the ninth grade, which would correspond with the freshman class of our own high school. In order to make the test absolutely fair, they should have been submitted to the high school rather than the eighth grade.

The writer often has been called on to dispose of the charge that, in general, our grandfathers, as children, were better spellers and better arithmeticians than the children of our own generation. At their best, heretofore, the champions of the old and the new have not been able to find any fixed basis for sound argument, but have proceeded from their own conclusions, which are often colored by personal prejudice.

December 20 the questions were taken verbatim from the list of 1846 and submitted to the pupils of our eighth grade, both eight B's and eighth A's. The time consumed in the arithmetic examination was, approximately, forty minutes, and in spelling about twenty minutes. The questions were given without any preparation whatever on the part of the children, without any previous notice to teacher or pupil, and without any intimation.

as to why the examination was called or any information as to the source of the questions.

The following were the questions in arithmetic:

1. Add together the following numbers: Three thousand and nine, twenty-nine, one, three hundred and one, sixty-one, sixteen, seven hundred two, nine thousand, nineteen and a half, one and a half.

2. Multiply 10,008 by 8,009.

3. In a town five miles wide and six miles long, how many acres?

4. How many steps of two and a half feet each will a person take in walking one mile?

5. What is one-third of $175\frac{1}{2}$?

6. A boy bought three dozen of oranges for $37\frac{1}{2}$ cents and sold them for $1\frac{1}{2}$ cents apiece; what would he have gained if he had sold them for $2\frac{1}{2}$ cents apiece?

7. There is a certain number, one-third of which exceeds one-fourth of it by two; what is the number?

8. What is the simple interest of \$1,200 for 12 years, 11 months and 29 days at 6 per cent.?

In 1846 the average per cent. of correct answers was 29.4. In Springfield, in 1905, the average per cent. of correct answers in this same examination was 65.5, and in Goshen the average of correct answers reached the remarkably high grade of 87.8 per cent.

Following is the list of words to be spelled:

Accidental.	Eccentric.	Hysterics.
Accessible.	Evanescent.	Imbecility.
Baptism.	Fierceness.	Inconceivable.
Chirography.	Feignedly.	Inconvenience.
Characteristic.	Ghastliness.	Inefficient.
Deceitfully.	Gnawed.	Irresistible.
Descendant.	Heiress.	

It will be noticed that their array is rather imposing and would be formidable even to the reader.

The average per cent. of correct answers in both subjects was:

1846—Springfield, arithmetic, 29.4; spelling, 40.6. 1905—Springfield, arithmetic, 65.5; spelling, 51.2. 1905—Goshen, arithmetic, 87.8; spelling, 46.2.

In 1846 the Springfield school year consisted of forty-four weeks of actual school work, each school day containing six hours. In 1905 in Springfield the year consisted of forty weeks of five hours each day. In other words, in 1846 the schools were in session about 1,340 hours; in 1905 the schools were in session about 1,000 hours. In 1846 the schools were among the best, as they had been the first to have a regularly appointed superintendent, they were entirely without any foreign, non-English-speaking element, had been highly complimented by Horace Mann and were under excellent supervision.

Their course of study was definite, and consisted daily of reading, writing, arithmetic, geography and spelling. Spelling especially was strongly emphasized, as the following extracts from the course of study at that time show:

"Accuracy in spelling and excellence in reading are deemed of the first importance.

"Ability to spell correctly is deemed highly important, as lying at the foundation of all requirements, without which no person can be accurate or intelligible as a scholar, or ever safe from exposure to great mortification in after life."

At the present time in Goshen the school year consists of thirty-six weeks of five hours a day, making the year contain 900 school hours. In both cities the children are supposed to enter the grades at six years and the high school at fourteen years of age. In reality the children who took the examination in 1846 had been in school correspondingly three years longer than their Springfield grandchildren in 1905, and more than four years longer than the Goshen children who wrote this examination.

Nevertheless the pupils of 1905 reached a much higher per cent. of effectiveness than their grandfathers of 1846. This is shown not only in the total of correct answers, but in reduced differences. For example, in 1846—

"More than one-fourth of the examples were passed over as too difficult to attack, and the incorrect answers were so far from

the mark as to overwhelm one with the conviction that the children were entirely lacking in power to mentally approximate the results. Answers to the fifth example varied from $5\frac{1}{3}$ to 6,312. Below are some of the incorrect answers to the problem in simple interest—a problem which was worked correctly by only thirteen pupils. Dollar signs, decimal points and commas are the pupils', the first two conspicuous chiefly by their absence:

"\$87.58.00; \$93.58; \$114.00; \$179.80; 907.92; \$937.80; \$9328.00; 93.28; 96.86; 115.08; 2.15.80; 449.50000; 475.00; 638.00; 932.200; 1860.58; 93.580; 491040; 892800; 31966 $\frac{2}{3}$; 19080000; 110; 88.05; 4593600; 5587200; 770017400; 11038980000; $72\frac{1}{2}$.

"Less than one-half of the class got the correct answer to the first example; fifty had the second correct; only eleven secured the desired result in the fourth, and seven—all boys—obtained the mastery in the fifth. Of twenty-nine girls, not one had the right answer to the fourth or sixth, and only three worked the interest problem to a successful conclusion. The girls averaged 9 per cent. on the test."

In Goshen only five pupils missed solving the first example correctly. The fifth was solved by all but two—both boys—who gave as their answers 351 and $526\frac{1}{2}$, respectively. These appear rather large numbers to be one-third of $175\frac{1}{2}$. With reference to the interest problems eight pupils omitted it altogether and seven solved it incorrectly, all the rest of the class having presented a correct solution. The seven incorrect solutions were: \$25991.80, \$3218.00, \$896.80, \$887.80, \$467.90, \$978.00, \$869.80.

Out of a total of forty-six who made 100 in arithmetic twenty-six were boys and twenty were girls. The whole class of 101 was composed of fifty-four girls and forty-seven boys. These comparative results in arithmetic speak for themselves.

Equally interesting are the results in spelling. For instance, on the old papers the words heiress and baptism were spelled in the following ways:

heirress	airest	babtism
heirruss	airresst	babtisism
hurriess	airhess	batism
heirees	arress	batisim
heirness	arris	baptsim
heiress	aries	baptisim
heress	ariest	baptisimm
hirress	areress	baptisem
hieress	arerest	baptisom
airress	eiress	baptisum
airess		baptisemn
		baptysm
		baptisiam
		baptisiasm

Our own papers show some brilliant flashes of originality, but with some differences. In the old papers we find that thirty-one pupils out of eighty-five misspelled baptism in fifteen different ways. The word heiress was written by forty-three pupils in twenty-two different ways. In our own papers we find that thirty-one pupils out of 101 misspelled baptism in twenty different ways and nine pupils misspelled heiress, each in his own way. The list follows:

babbtizm	batistion	hirest
babtizimn	babptisim	eiress
babtismn	baptysm	hierest
babtisiom	babtism	harriss
batisim	baptizem	earess
baptisim	babtazim	hirress
baptisism	babtisum	herris
bapitisan	babtisem	airasess
baptizam	babystism	heirous
bathizthm		

Notwithstanding the fearful and wonderful ways in which our children managed to misspell baptism, we have the satisfaction of knowing that with approximately four years' less schooling

they raised the total percentage of correct answers from 40.6 to 46.2.

When we consider that originally the questions were set for pupils who heard English in all their homes, who attended school one-third longer each year than now, who had fewer studies and hence more time for each, who had been during the five preceding years under able principals, were in a school in which the younger and backward pupils had been taken out nearly two years before, and who were of an average age with our present high school freshmen, the results of the examinations in 1905 present to the thoughtful critic a number of very plain facts. The results establish the superiority of the modern schools in spelling and arithmetic. If the test had been set for pupils in Springfield alone this conclusion might be questioned, but it would be difficult to prove the incorrectness of it since the pupils of two representative schools so far apart as Springfield and Goshen show uniformly greater grasp and increased power.

Nor is it difficult to explain the reasons for the superiority of the modern school. In 1846 eleven different books, excluding geography, history and physiology, were read below the high school. To-day our children read from seventy to eighty, in covering the same course. Our school libraries are filled with books that are not only informational but have their substance arranged in a manner to stimulate and arouse the interest. These books cover a vast range of subjects, and in their reading the child acquires unconsciously a large vocabulary, an increase of power over the spelling of words, larger opportunities and is broadened in his sphere of usefulness.

There can be little question that the school to-day is vastly superior in efficiency to the school of our grandfathers' time, and in my own mind there is equally little question as to the fact that in like manner will the schools of our grandchildren be superior to our own.

V. W. B. HEDGEPETH.

Trigonometry and Surveying, Goshen High School, Goshen, Ind.